NON-PUBLIC?: N
ACCESSION #: 9101280180
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Callaway Plant Unit 1 PAGE: 1 OF 3

DOCKET NUMBER: 05000483

TITLE: A Reactor Trip Due To A Failure Of A Controller/Driver Card For The 'B' Feedwater Regulating Valve
EVENT DATE: 12/30/90 LER #: 90-017-00 REPORT DATE: 01/25/91

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: 1 POWER LEVEL: 100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION:
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: K. R. Evans, Instrument & Control TELEPHONE: (314) 676-8645

COMPONENT FAILURE DESCRIPTION:
CAUSE: X SYSTEM: SJ COMPONENT: CAP MANUFACTURER: W351
REPORTABLE NPRDS:

SUPPLEMENTAL REPORT EXPECTED: No

ABSTRACT:

On 12/30/90, at 1152 CST, a reactor trip occurred due to the failure of a controller/driver card for the 'B' Feedwater Regulating Valve (FRV). The FRV failed closed and could not be re-opened by the licensed operators from the Main Control Board in either the automatic or manual mode. The subsequent 'B' Steam Generator low water level actuated the reactor trip signal. As a result of the RPS actuation, a feedwater isolation (FWIS) and an auxiliary feedwater actuation (AFAS) were generated by design. The plant was in Mode 1 - Power Operations at 100 percent reactor power. The reactor coolant system temperature was 588 degrees F and the pressure was 2235 psig. The licensed operators recovered from the trip and Engineered Safety Feature (ESF) actuations via plant procedures.

The FRV controller/driver card was replaced at 1330 on 12/30/90. The manufacturer of the card is Westinghouse (component #2837A16G03). The

plant was returned to Mode 1 - Power Operations at 0134 on 12/31/90. A capacitor in the power supply section of the card was the cause of the card failure. The failure of the capacitor is indeterminate.
Corrective actions include the failure history and other applications of the use of this capacitor will be evaluated; and an evaluation will be performed to determine the feasibility of adding a redundant controller/driver card to the circuit for the FRV's.

END OF ABSTRACT

Basis for Reportability

On 12/30/90 at 1152 CST, an automatic reactor protection system (RPS) reactor trip occurred on steam generator low level. As a result of the RPS actuation, a feedwater isolation (FWIS) and an auxiliary feedwater actuation (AFAS) were generated by design. These ESF actuations are reportable under 10CFR.73(a)(2)(iv).

Plant Conditions at Time of Event

Mode 1 - Power Operations 100 percent Reactor Power. Reactor Coolant System (RCS) Temperature (ave) - 588 degrees F.
RCS Pressure - 2235 psig.

Description of Event

On 12/30/90, at 1152 CST, a reactor trip occurred due to the failure of a controller/driver card for the 'B' Feedwater Regulating Valve (FRV). The FRV failed closed and could not be re-opened by the licensed operators from the Main Control Board in either the automatic or manual mode. The subsequent 'B' Steam Generator low water level actuated the reactor trip signal. The operators had decided to initiate a manual trip, but the automatic trip signal actuated first, approximately 24 seconds after the initial indications of the component failure. The licensed operators recovered from the trip and ESF actuations via plant procedures. The FRV controller/driver card was replaced by 1330 on 12/30/90. The plant was returned to Mode 1 - Power Operations at 0134 on 12/31/90.

Root Cause

This event was caused by the failure of the controller/driver card for the 'B' FRV. The manufacturer of the card is Westinghouse (component #2837A16G03). A 2.2 microcurie F, 50 volt ceramic monolithic capacitor

in the power supply section of the card was the cause of the card failure. The failure of the capacitor is indeterminate.

Corrective Actions

1. The FRV controller/driver card was replaced and tested satisfactorily. The failed component in the card has been determined to be a capacitor in the power supply section of the card. The failure history and other applications of the use of this capacitor will be evaluated.

2. Evaluation will be performed to determine feasibility of adding a redundant controller driver card to the circuit for the FRV's.

Safety Significance

Plant equipment functioned as requir
d by design. There was no
detrimental effect on plant equipment. The safety related equipment performed as expected and no unusual radiation readings or chemistry results were attributed to the event. The event did not pose a threat to the health and safety of the public.

Previous Occurrences

None

Footnotes

The system and component codes listed below are from IEEE Standards 805-1984 and 803A-1983, respectively.

1) System - SJ, Components - CBD, 20, and CAP
2) System - JC
3) System - AB
4) System - JE

UNION
ELECTRIC
Callaway Plant

January 25, 1991

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

ULNRC-2358

Gentlemen:

DOCKET NUMBER 50-483
CALLAWAY PLANT UNIT 1
FACILITY OPERATING LICENSE NPF-30
LICENSEE EVENT REPORT 90-017-00
A REACTOR TRIP DUE TO A FAILURE OF A CONTROLLER/DRIVER CARD FOR THE 'B' FEEDWATER REGULATING VALVE

The enclosed Licensee Event Report is submitted pursuant to 10 CFR 50.73(a)(2)(iv) concerning a reactor trip due to a failure of a controller/driver card for the 'B' Feedwater Regulating Valve.

J. D. Blosser
Manager, Callaway Plant

JDB/TPS/MAH/lrj

Enclosure

cc: Distribution attached

Mailing Address: P. O. Box 620, Fulton, MO 65251

ATTACHMENT 1 TO 9101280180 PAGE 2 OF 2

cc distribution for ULNRC-2358

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